

DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch
690 Walnut Ave.St. 150
Vallejo, CA 94592-1133
(707) 649-5453
(707) 649-5493

Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 69.28**WELDING INSPECTION REPORT****Resident Engineer:**Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-003308**Date Inspected:** 21-Jul-2008**Project Name:** SAS Superstructure**OSM Arrival Time:** 630**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1530**Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **Location:** Shanghai, China**CWI Name:** Zhao Chen Sun and Lvliqing**CWI Present:** Yes No**Inspected CWI report:** Yes No N/A**Rod Oven in Use:** Yes No N/A**Electrode to specification:** Yes No N/A**Weld Procedures Followed:** Yes No N/A**Qualified Welders:** Yes No N/A**Verified Joint Fit-up:** Yes No N/A**Approved Drawings:** Yes No N/A**Approved WPS:** Yes No N/A**Delayed / Cancelled:** Yes No N/A**Bridge No:** 34-0006**Component:** OBG and SAS Tower Fabrication**Summary of Items Observed:**

On this date, Caltrans Office of Structural Material (OSM) Quality Assurance (QA) Inspector Joselito Lizardo was present as requested to perform observations on the fabrication of Orthotropic Box Girder (OBG) and SAS Tower at Zhenhua Port Machinery Company (ZPMC) facility at Changxing Island, in Shanghai, China.

The QA Inspector has randomly observed the following activities on sub-assembly Bays mentioned below;

Bay 4: Tower Diaphragm

This QA Inspector randomly observed three ZPMC welders Li Xue Hua ID #058174, ID #053609, and welder ID #053605 utilizing the FCAW Process in the 3G (Vertical Groove) Position with a 1.4mm diameter electrode, filler metal brand E71T-1, class Supercored 71H, semi automatic with ZPMC WPS WPS-B-T-2233-B-U3-F, to weld fill passes on groove (bent heavy plate) splice butt joint on Tower Diaphragm Flange Sub-Assembly WSD1-SA317 weld joints 8A and 5B and NSD1-SA261 weld joint 8B. The QA Inspector randomly observed ZPMC CWI Zhao Chen Sun monitoring preheat and weld parameters.

Tack welding/fit-up of PJP connection between 40mm thick double diaphragm stiffener/connector plate to tower diaphragm plate SSD1-SA27 A/B using Excalibur 9018M H4R, 4.8mm diameter electrode, preheat of >180 degree C following procedure WPS-B-T-3312-Tc-P5. The QA Inspector randomly observed ZPMC CWI Zhao Chen Sun monitoring preheat and weld parameters.

Heat straightening was also observed on 6-open rib stiffener to bottom panel BP304(A)-001 weld joints 001~012 due to welding distortion. Oxy-acetylene gas was used with thermal heat input of less than 650 degree C following

WELDING INSPECTION REPORT

(Continued Page 2 of 3)

procedure HSR1(B)- 1541. Another heat straightening was done on 45mm thick plate marked A-9 due to mill induce distortion. Natural gas was used with thermal heat input of < than 650 degree C and following procedure HSR1(T)-2797.

Minor fillet weld repair was observed on 6-open rib stiffener to side panel SP395-001-001~012 by ZPMC welder Zhang Peng ID #049769 using TL-508 electrode. ZPMC CWI Wu Ming Cai noted monitoring said repair.

Bay 7: OBG - Floor Beam Sub Assembly

The QA Inspector randomly observed ZPMC welder Liu Kaige ID Number 044830, utilizing the FCAW Process with a 1.4mm diameter electrode, filler metal brand E71T-1, class Supercored 71H in the 3G (Horizontal Groove) Position with ZPMC WPS WPS-B-T-2233-Tc-U4-F, to weld fill pass on skewed connection plate (of 300mm x 300mm diagonal brace) to floor beam bottom flange Sub-Assembly SSD10-PP038-131/132. The QA Inspector randomly observed ZPMC QC Yang Ding monitoring weld parameters with the supervision of ZPMC CWI Hu Wei Qing.

The QA Inspector randomly observed ZPMC welder Hong Shuili ID Number 044815, utilizing the Flux Cored Arc Welding (FCAW) Process in the 1G (Flat Groove) Position with ZPMC WPS WPS-B-T-2231-Tc -U4b-F, to weld the fill pass on CJP between flange and web plate on corner assembly CA006-041/042. The QA Inspector randomly observed ZPMC CWI Hu Wei Qing, monitoring weld parameters. FCAW fillet welding (2F) was observed on multiple stiffeners to web plate of floor beam FB024-001-030/031. ZPMC welder working on this was identified as Chen Chuanzong ID# 044824. Another fillet welding(2F) was noted on stiffener to web plate of longitudinal shear plate LD021-002-011. ZPMC welder Zheng Mingye ID #066695 was seen performing the task.

SMAW(2F/3F) fillet welding on 8.0mm thick plate end cap to 300mm x 300mm hollow steel diagonal brace for various floor beams sub-assembly FB006-060-007, FB006-059-004, and FB006-054-007. This QA observed ZPMC welder Li Wenguo ID #066261 doing the task using TL-508 electrode. SMAW(2F/3F) fillet weld repair on various stiffeners to web plate/flange of floor beam FB003-026, FB003-021 and FB003-034 due to undersize fillet. Two ZPMC welders Wu Haijun ID #201087 and Bian Henggui ID #051359 were observed using TL-508 4.0mm diameter electrode following procedure WPS-B-P-2112. The QA Inspector randomly observed ZPMC CWI Hu Wei Qing, monitoring weld parameters.

Bay 8: Tower Diaphragm

The QA Inspector randomly observed ZPMC welder Wang Cai Li ID Number 045203, utilizing the FCAW Process in the 1G (Flat Groove) Position with ZPMC WPS WPS-B-T-2231-B-U2-F-1, to weld the root pass on plate splice butt joint of floor beam FB077-002-015. The QA Inspector randomly observed ZPMC CWI Hu Wei Qing monitoring weld parameters. The QA Inspector also randomly monitored weld parameters and recorded them as follows: 286 amps, 30.4 volts with travel speed of 524mm/minute. Weld parameters appeared to comply with contract requirements.

The QA Inspector randomly observed ZPMC welder Xu Pei Pei ID Number 050323, utilizing the SAW Process in the 1G (Flat Groove) Position with ZPMC WPS WPS-B-T-2221-B-L2c-S-1, to weld the cover pass on plate splice butt joint of floor beam FB087-002-015. The QA Inspector randomly observed ZPMC CWI Hu Wei Qing monitoring weld parameters. The QA Inspector also randomly monitored weld parameters and recorded them as follows: 576 amps, 30.1 volts with travel speed of 500mm/minute. Weld parameters appeared to comply with

WELDING INSPECTION REPORT

(Continued Page 3 of 3)

contract requirements.

This QA Inspector randomly observed three ZPMC welder Jiang Yong Sheng ID number 045240, Chen Chao Nian ID #048688 and Li Xing ID # 066675 utilizing the FCAW Process in the 3G (Vertical Groove) Position with a 1.4mm diameter electrode, filler metal brand E71T-1, class Supercored 71H, semi automatic with ZPMC WPS WPS-B-T-2233-B-U3-F, to weld fill pass on groove (bent heavy plate) splice butt joint on Tower Diaphragm Flange Sub-Assembly NSD1-SA265- 7B, WSD1-SA372 A/B-6A and NSD1-SA326-10B respectively. The QA Inspector randomly observed ZPMC CWI Lvliqing monitoring weld parameters.

Heat straightening was observed on floor beam FB045-006 weld joints 007 and 008 and longitudinal shear plate LD001-007 weld joints 001~012 due to welding distortion. Oxy-acetylene gas was used with thermal heat input of less than 650 degree C and following procedure HSR1(B)-1533 and HSR1(B)-1490 respectively.

Summary of Conversations:

No significant conversation occurred today.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Mazen Wahbeh, (818) 292-0659, who represents the Office of Structural Materials for your project.

Inspected By:	Lizardo,Joselito	Quality Assurance Inspector
Reviewed By:	Cuellar,Robert	QA Reviewer
